SUPPLY LINES

NEWSLETTER OF THE NHDES WATER SUPPLY ENGINEERING BUREAU Fall 2005

ON THE WEB AT WWW.DES.NH.GOV/WSEB

2005 New Hampshire Drinking Water Exposition and Trade Show

This fall the New Hampshire Water Works Association (NHWWA) will again host the New Hampshire Drinking Water Exposition and Trade Show. This year's Expo will be held on **Wednesday, November 2, 2005 at the Center of New Hampshire, 700 Elm Street, Manchester**. The Expo will run from 8:00 a.m. to 4:00 p.m. There will be over 100 exhibitors and 25 seminars. Seminar topics include: arsenic, education, perchlorate, MtBE, security issues, distribution topics, and much more.

Due to a grant supplied by DES, admission to both the exhibitor displays and the seminars is **FREE**. Contact hours will be awarded for attending the seminars. These hours may be used to satisfy operator certification renewal requirements.

If you have any questions about the Expo, please contact the NHWWA at (603) 415-3959 or at NHWWA@worldpath.net.

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INSIDE

Operator Certification Renewal

RSA 332-E:6 requires that certificates be renewed every two years. The current certification cycle ends on December 31, 2005.

The end of the year is fast approaching, and now is a good time to examine your records and organize your contact hour certificates for submittal to DES for your renewal. Operators holding grades I - IV must submit proof that they attended a minimum of 20 approved training contact hours (TCH) within the 2004-2005 certification period. Grade IA operators need to submit proof of five TCHs. Operators that received a new certification, not an upgrade, in the current renewal cycle (January 1, 2004 through December 31, 2005) are not required to submit TCHs.

Questions about the renewal procedures should be addressed to Chip Mackey at (603) 271-2410 or hmackey@des.state.nh.us.

Boil Water Emergency Tests Emergency Plan

By Edwin O. Betz, PE, Peterborough Public Works Director

Peterborough's recent boil water emergency provided an excellent test of its Water Emergency Response Plan. In response to total coliform hits in routine samples on August 5, follow-up testing confirmed total coliform and found E. coli in two samples. The E. coli hits resulted in a boil water order and activated the emergency plan. The Fire Chief, as the designated Emergency Management Director, activated the town's Emergency Operations Center (EOC) in the firehouse and coordinated the town's overall response, involving several departments.

The town opened multiple channels of communication with water system users (in particular, the hospital and nursing homes) and the media. Fire, highway and utilities personnel hand-delivered boil water notices to all 1,630 metered connections. Administrative staff handled hundreds of telephone calls from concerned residents. Informational meetings were held with health care providers and the media. The Town Administrator and department heads visited restaurants to encourage them and determine their needs. The Police Chief coordinated delivery of 5,000 gallons of bottled water to the Police Station for subsequent free distribution over the next several days.

The Utilities Department's first priority was to identify the source of the bacteria. All wells, pumping stations and tanks were checked. Raw water samples were taken at the wells and tanks, chlorination was started, residual maintained, and subsequent bacteria samples taken. Although the causes of the bacteria hits are not known with certainty, the suspected source of the E. coli was back-siphonage from a pool, irrigation system, or interior plumbing, and the total coliform most likely resulted from a combination of extended hot weather, low turnover, and stagnant areas within the tanks.

Activating the Emergency Plan uncovered several issues with the EOC that need to be addressed: no emergency power, insufficient parking, no telephone lines or radios in the Selectmen's room, no network jacks for laptop computers, no kitchen facilities. Press briefings were held in the EOC, which would have been impractical if it were very busy. The EOC should also be separate from areas where the public could come for information and assistance. There were complaints that some people never received the boil water notice; they never read the newspaper, or did not have radio/television/internet. For the most part, however, our water customers appeared to be satisfied that the Town had been open in its communications, did its best to keep them updated, and acted in customers' best interests.

For more information on Peterborough's Boil Water Emergency, please contact Ed Betz at (603) 924-8008.

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Security Corner

Rules Changing to Require Notification of Incidents

Env-Ws 360.01 *Notification of Impairment* is being revised to require community and non-community, non-transient water systems to notify the WSEB within 24 hours of an emergency or security breach. Specifically, the rule will require *notification whenever treatment of a public water supply is interrupted, or the source of the supply is damaged or depleted so as to impair, or likely to impair, the quality or the sufficiency of the supply. Or after discovery of any actual or suspected tampering, sabotage, security breach, or any suspicious incident at the water system.* It is important that systems notify the WSEB during an emergency or security incident for several reasons. Most importantly, the WSEB is available for assistance and guidance. Notification will allow the WSEB to track any suspicious activities throughout the state to watch for trends. Water system security is a serious issue and while these types of incidents may have been overlooked in the past they need to be investigated and managed seriously by the water system and local law enforcement. Notification will also identify system weaknesses and needs so that the WSEB can work with water systems to develop ways to prevent further incidents.

DES has notification cards for all public water systems. These cards are versatile and can be hung up in pump houses, treatment buildings, offices, company vehicles, or kept within the system's emergency plan. The 5½" by 8" card lists emergency procedures on one side and important DES phone numbers on the other side. To recieve copies, please contact Johnna McKenna at (603) 271-7017 or jmckenna@des.state.nh.us.

Workshops

EPA, New England Water Works (NEWWA) and DES held three emergency planning for water security workshops this spring in Laconia, Dover and Keene. The workshops brought together water systems and local first responders and included a table-top exercise. Presentations on incident command and the EPA Response Protocol Toolbox were also given. The workshops were very successful and were a great start to developing important relationships. More workshops will be held throughout New Hampshire later this year.

Security Products

The WSEB has been chosen by EPA to participate in the Businesses United for Water Security pilot project, which is geared toward protecting our small drinking water systems from intentional attacks. Water systems will be able to purchase security products from participating businesses and receive grants from the WSEB to pay for installation. Participating businesses who can offer discounts to water suppliers will receive free advertising through a project website as well as other recognition and rewards. The grant program will be offered later this year, so keep an eye on your mailboxes for more information.

New Drinking Water Standards Create a Wastewater and Residual Disposal Challenge

Finding methods to dispose of residuals and wastewater derived from treatment processes for arsenic and radionuclides is proving to be a significant challenge. The new 0.010 mg/L Maximum Contaminant Level (MCL) for arsenic took effect in 2004 for new systems, while existing systems have until 2006 to comply. In 2003 USEPA established an MCL for uranium of 30 micrograms/liter (20 picocuries per liter), which becomes effective in 2007. These regulations will require water systems with water sources that exceed these standards to either treat or blend water in order to comply with the new MCLs, or develop alternative water sources. While there are established technologies that can remove these contaminants from drinking water in order to meet the MCL requirements, disposal of residuals is not that easy.

Traditional water treatment systems for iron and manganese removal have discharged backwash water associated with the fluffing or regeneration of treatment media to the ground and groundwater. However, iron and manganese are not considered regulated contaminants, and discharges of solutions containing concentrated amounts of these chemicals is therefore allowed by state and federal law. Radionuclides and arsenic, on the other hand, are regulated contaminants, so neither of these chemicals may be discharged to the ground surface or groundwater. Backwash wastewater from water treatment systems that contain concentrated levels of radionuclides or arsenic may create "hot spots" of contaminated soil and groundwater and become waste sites that may require expensive clean-up.

DES has developed guidance on how to dispose of waste generated during the treatment of water for arsenic (visit www.des.nh.gov/factsheets/ws/ws-3-22.htm).

Disposal options for waste generated during the treatment of uranium and other radionuclides (radium-226, radium-228, gross alpha, and beta particle/photon radioactivity) are very limited at this time and appear to be costly. The only known option for properly managing and disposing of waste containing concentrated radionuclides is to contract with a firm that is licensed to manage, store, and dispose of this type of waste. DES has advocated that water systems with MCL exceedances for radionuclides: 1) Blend water with other approved sources of water to achieve applicable MCLs; 2) Develop alternative sources of water that meet MCL requirements; or 3) Interconnect with, and obtain water from another water system that has an adequate quality and quantity of water. DES is currently pursuing various initiatives to identify alternative measures to safely manage and dispose of radionuclides derived from water treatment processes.

For more information regarding regulatory issues associated with disposing of wastewater or residuals associated with removing arsenic or radionuclides from drinking water, please contact Brandon Kernen at (603) 271-0660 or bkernen@des.state.nh.us.

Free, Confidential Capacity Assistance Available

A wide variety of free assistance is available to help with the operations, management, and financial wellbeing of public water systems, through DES's Capacity Development/ Capacity Assurance Program. The program's goal is to ensure that all community and non-transient, non-community systems in New Hampshire have the technical, managerial and financial capacity to comply with current and future drinking water regulations. Let us know how we can help you to improve your water system capacity.

WSEB staff and contracted technical assistance providers are available to assist systems in the financial planning needed to take on any major capital improvements to water systems. This includes identification of funding sources and training in asset management that allows for budgeting and replacement over time. We can also assist in the evaluation of treatment and non-treatment options for compliance with the new arsenic and radionuclides rules.

For additional information on the Capacity Development Program, please visit our website at www.des.nh.gov/wseb/capacity or contact Cindy Klevens at (603) 271-6307 or cklevens@des.state.nh.us.

Water Conservation Rules Adopted

DES adopted new water conservation rules on May 13, 2005. The rules apply to community water systems, water bottlers applying for new sources, new groundwater withdrawals that exceed 57,600 gallons per day, and new surface water sources that require a 401 Water Quality Certificate.

Development of the water conservation requirements started four years ago with a stakeholder group assisting DES in a study required by Senate Bill 331 of the 2000 Legislature (www.des.nh.gov/pdf/Report_DES-PUC.pdf). Based on recommendations in the report, the Legislature amended the NH Safe Drinking Water Act (RSA 485:61) in 2002 to require DES to develop water conservation rules.

The rules will assist New Hampshire in maximizing the beneficial use of water resources. Studies have shown that businesses implementing basic water conservation measures can typically reduce water usage by 15-35 percent and recoup their costs on average within 2.5 years. Studies have also shown that residential water use can be reduced on average by 35 percent when water conservation measures are implemented.

Env-WS 390 and a summary of the requirements of the rules for different types of water users is available at www.des.nh.gov/h2o_conservation.htm.

Maintaining a Cross Connection Control Program During Economic Hard Times and Budget Cuts

Two strategies that can help maintain the viability of a cross connection control program are maintaining public support and contracting out the program and operation. A key factor in maintaining public support is education. Water commissioners, municipal officials, and especially water system users) must be made aware of the benefits to be obtained and the possible reduction in risks associated with maintaining the cross connection control program. These stakeholders should also be made aware of the possible consequences, including illness and even deaths, if a cross connection control program is discontinued or inadequately funded. Informational videos and fact sheets are available from New England Water Works Association (NEWWA) at (508) 893-7979 or at their website at www.newwa.org to help with your outreach efforts.

A second factor is making the cross connection control program self-supporting without imposing unreasonable fees and conditions on the water system's users. Try to relate the testing fees paid by the water system's users to the fees being charged by other professionals, such as plumbers and electricians. These fees should not be thought of as revenue, to fund other water-related and even unrelated activities. Without general support from the water system's users, any cross connection control program will struggle to survive during hard times.

Another option may be for the water system to "contract out" the operation of the cross connection control program. This approach should reduce the man-hours spent by the water system's staff in operating the program. The time saved could then be used for other water system activities; although there still could be some administrative time required by the water system. In contracting out the program, a major pitfall to avoid is increasing the testing fees and other costs to the water system's users beyond an amount that is "acceptable" to water system users.

For any public water system, the present requirements on staff time and funding are many. New and existing state and federal rules will only increase these demands in the future. Priorities need to be established by the water system according to the benefits, health risks, system reliability and performance, and safety. Maintaining a viable cross connection control program satisfies most of these concerns and it should be given sufficient priority by any public water system.

Perchlorate Update

DES is working with a stakeholder group to ensure that the most recent and up-to-date science is used in developing a public health standard for perchlorate. Since last June, DES has met with the stakeholder group twice to discuss what types of risk assessment models and uncertainty factors should be used in developing a standard, and the amount of perchlorate that humans ingest from various dietary sources. Copies of handouts from the two meetings are available upon request. The next meeting is sheduled for October.

For more informaiton on perchlorate, the public health goal stakeholder group, or for a list of recommended laboratories to complete perchlorate analyses, please contact Brandon Kernen at (603) 271-0660 or bkernen@des.state.nh.us, or review the article in the Spring 2005 issue of *Supply Lines* at www.des.nh.gov/wseb/supply_lines/spring_05.pdf.

Important Links to the Water Supply Engineering Bureau Website www.des.nh.gov/wseb

In trying to provide its customers with the most current and accurate public water system (PWS) information,the Water Supply Engineering Bureau encourages those associated with water systems to use the following web links:

1. ***Water Supply Change of Address Form***
All PWS owners are responsible for notifying the WSEB of changes in ownership as well as address changes of key individuals, such as owners, primary operators (sampling agents for transient non-community systems) and, if pertinent, owner representatives. These changes can be made online at www.des.nh.gov/wseb/changeofaddress.

2. ***Public Water System Information*** The information is available on the WSEB web page under One Stop Data Retrieval. The link www.des.nh.gov/OneStop/Public_Water_Systems_Query.aspx provides information on EPA ID, system name and location address, system type and category, population served, and service connections. This is also the location for the master sampling schedules.

Look for these four icons:


Contact information


Sampling schedules and forms


Laboratory results

Lead and copper records

3. ***Accredited Laboratories***
A list of accredited labs is also available at www.des.nh.gov/asp/NHELAP/labsview.asp.

4. ***DES Laboratory***
Sample bottles, specific to each water test, can be obtained from an accredited lab. If you choose to use the DES Laboratory, please order your bottles by calling (603) 271-3445, (603) 271-3446 or online www.des.nh.gov/onestop/Public_Water_Systems_Container_Request.asp

Water Supply Enforcement Activity in 2004

During 2004, the Water Supply Engineering Bureau (WSEB) issued 202 Letters of Deficiency (LODs) to public water systems. An LOD is a formal letter, sent by certified mail, that identifies violations of specific regulations, and requests the water system owner to bring the system into compliance within a stated time period.

WSEB also issued six Administrative Orders, which are usually issued for particularly serious violations, or instances in which a water system continues to violate regulations after having received an LOD. An Administrative Order is a legally enforceable document that requires water system owners to undertake corrective actions according to a specified compliance schedule. Failure to comply with an Administrative Order can result in the imposition of an administrative fine, or the referral of the case to the Attorney General's Office. Administrative Orders are usually recorded with the appropriate county registry of deeds to alert potential buyers or financial institutions of compliance issues with a water system.

One Notice of Proposed Administrative Fine and Hearing (NPF/H) was issued in 2004. As the name implies, an administrative fine seeks to impose a monetary penalty for regulatory violations. During 2004, $7,100 was collected from a previously issued administrative fine.

Enforcement Activity
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Personnel Changes at the WSEB

Cindy Klevens, PE, oversees the capacity assurance program for small systems and will be a key player in implementation of rules on arsenic and radiological contaminants. Cindy is a chemical engineer with many years of private sector consulting experience. She can be reached at (603) 271-3108 or at cklevens@des.state.nh.us.

Stephen Roy, PG, supervises groundwater extraction and discharges, and water conservation programs. Stephen is a hydrogeologist with many years of consulting and research experience. He can be reached at (603) 271-3918 or at sroy@des.state.nh.us.

Allyson Gourley is the new manager of the chemical monitoring program in the Bureau's Monitoring and Enforcement section. She can be reached at (603) 271-0655 or agourley@des.state.nh.us.

Dean Robinson is the new Environmental Technician for the Chemical and Monitoring Section. He can be reached at (603) 271-6703 or at drobinson@des.state.nh.us.

Enforcement Activity

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WSEB also has the authority to require public water systems to issue boil orders under a variety of circumstances. The most common cause for the issuance of a boil order is the discovery of *E. coli* or fecal coliform bacteria in a water sample. WSEB required 12 water systems to institute boil orders. The affected systems ranged from small campgrounds to large municipal systems

For more information on enforcement issues, please contact Alan Leach at (603) 271-2854 or aleach@des.state.nh.us. LODs, Administrative Orders, and NPF/Hs issued by the WSEB (and other DES programs) can be viewed on-line at www.des.nh.gov/legal/documents.